

Conceptual change using the perspective of threshold concepts: evidence from economics

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The idea of a threshold concept: an overview

- An idea born to make sense of problems faced by undergraduates
- An idea that has proved fertile in encouraging conversations about learning in particular disciplines.
- An idea with some distinctive implications for teaching and learning

'I think the hardest topic I found is the ISLM.... just because there's so many different diagrams to go through that it just seems really difficult to go through them and find a logical process for it.'

'Because at A level we kind of took the aggregate demand and aggregate supply like a given and like a group built from that. Whereas so far this term we have been working on the derivation of like aggregate demand and aggregate supply from IS/LM and it has been quite interesting to see how at A level whilst we thought like we knew everything they were glossing over a lot of the assumptions and theory.'

'...I got it and then I lost it and then I sort of got it again but now I'm completely lost, you know...'

So What is a Threshold Concept?

Five Suggested Characteristics:

- Transformative
- Integrative
- Irreversible
- Boundary Setting
- Troublesome

Integrative?

To some extent every instance of learning – every conceptual change involves some integration of understanding – so what makes conceptual change involving a threshold concept something different?

Different Kinds of Integration – example 1

Q. Why has the price of beer in this town gone down?

A. Because more of it is being sold and that means the pubs can do more bulk buying of beer which brings the cost of beer down for them

Added in another explanation

Q. Why has the price of sandwiches in the town centre gone down?

A. Because people have got less money and they put the price down to sell

But the account of the supply /cost side is just the same

Different Kinds of Integration - Example 2

Q. Why has the price of beer in this town gone down?

A. Because more of it is being sold and that means the pubs can do more bulk buying of beer which brings the cost of beer down for them

Still explaining price in terms of cost but the understanding of cost has changed

Why has the price of sandwiches in the town gone down?



Different Kinds of Integration - Example 3

Q. Why has the price of beer in this town gone down?

A. Because more of it is being sold and that means the pubs can do more bulk buying of beer which brings the cost of beer down for them

Clearly using a market explanation rather than a single business explanation

Why has the price of sandwiches in the town gone down?



Different kinds of integration in Conceptual Change

A change in number of factors brought into play: **(component relations)**

A change in the way an underlying factor is understood:
(component reconfiguration)

A change in the theoretical framing of the problem – from single
business to a market phenomenon – **(theoretical re-framing)**

Different kinds of integration in Conceptual Change

$$C_1 = f(x_1)$$

$$C_2 = f(x_1, y_1)$$

$$C_1 = f(x_1)$$

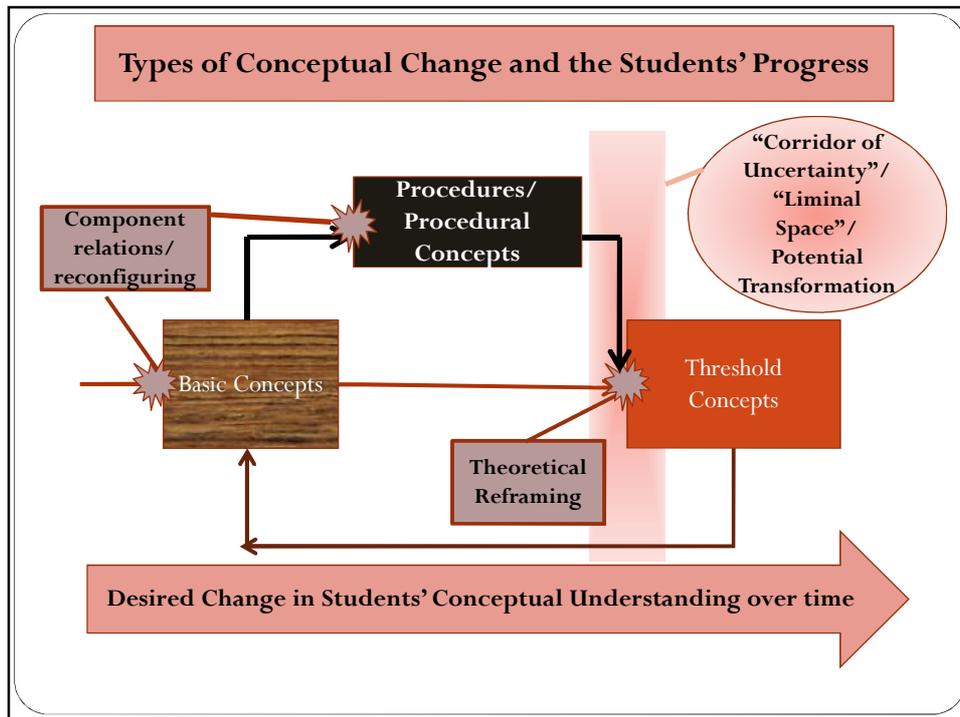
$$C_2 = f(x_2)$$

$$C_1 = f(x_1)$$

$$C_2 = f(x_2 \text{ etc.})$$

This is the
kind of
integration
associated
with
Threshold
Concepts





References

- Davies, P. and Mangan, J. (2007). Threshold concepts and the integration of understanding in economics, *Studies in Higher Education*, 32, 6, pp. 711-726.
- Davies, P. and Mangan, J. (2008). Embedding Threshold Concepts: from theory to pedagogical principles to learning activities in R. Land, J.H.F. Meyer and J. Smith (Eds) *Threshold concepts in the Disciplines* (Rotterdam: Sense Press), pp. 37-50.
- Davies, P. and Mangan, J. (2010). Assessing Progression in Students' Economic Understanding: The Role of Threshold Concepts. In J.H.F. Meyer, R. Land and C. Baillie (Eds) *Threshold concepts and transformational learning*, Rotterdam: Sense Publishers pp. 193-206.
- Davies, P. (2011). Threshold Concepts in Economics. In. G. Hoyt and KM. McGoldrick, Eds. *The International Handbook on Teaching and Learning Economics*. Aldershot: Edward Elgar Press.